IN THE CLAIMS:

Please amend the Claims as follows:

1-9. (Cancelled)

10. (Currently amended) ~~The~~ An electrochemical machining method ~~of Claim 9,~~ for rejuvenating at least one cooling passage within an airfoil, said electrochemical machining method comprising:

preparing an inner surface of the cooling passage for electrochemical machining, including removing residue from the inner surface, wherein said preparation of the inner surface comprises performing a finishing process to remove non-conductive residue;

positioning an electrode in the cooling passage, the electrode comprising a conductive core and an insulating coating, the insulating coating exposing a plurality of exposed portions of the conductive core; and

machining a groove pattern on the inner surface of the cooling passage using the exposed portions of the conductive core by passing an electric current between the electrode and the airfoil while circulating an electrolyte solution through the cooling passage, said machining producing a rejuvenated cooling passage.

11. (Original) The electrochemical machining method of Claim 10, wherein said preparation of the inner surface further comprises performing a chemical stripping process prior to performing the finishing process.

12. (Original) The electrochemical machining method of Claim 11, wherein said chemical stripping process includes removing a vapor-phase aluminide coating from the inner surface of the cooling passage.

13. (Original) The electrochemical machining method of Claim 10, wherein said finishing process comprises:

immersing the airfoil in an acidic solution;
rinsing the airfoil;
ultrasonically cleaning the airfoil; and
re-rinsing the airfoil.

14. (Original) The electrochemical machining method of Claim 13, wherein said finishing process further comprises flushing the cooling passage after said re-rinsing.

15. (Original) The electrochemical machining method of Claim 13, wherein the acidic solution comprises fluosilicic acid.

16. (Original) The electrochemical machining method of Claim 15, wherein the fluosilicic acid comprises about zero percent (0%) to about seventy five percent (75%) of a mineral acid, the mineral acid comprising phosphoric acid, nitric acid, sulfuric acid, or combinations thereof.

17. (Cancelled)

18. (Currently amended) ~~The~~ An electrochemical machining method ~~of Claim 17~~ for rejuvenating at least one cooling passage within an airfoil, said electrochemical machining method comprising:

preparing an inner surface of the cooling passage for electrochemical machining, including removing residue from the inner surface;

positioning an electrode in the cooling passage, the electrode comprising a conductive core and an insulating coating, the insulating coating exposing a plurality of exposed portions of the conductive core; and

machining a groove pattern on the inner surface of the cooling passage using the exposed portions of the conductive core by passing an electric current between the electrode and the airfoil while circulating an electrolyte solution through the cooling passage, said machining producing a rejuvenated cooling passage,

wherein the electrode further comprises a tip and an end, the conductive core extending between the tip and the end, wherein the exposed portions comprise conductive strips of the conductive core extending between the tip and the end of the electrode, wherein the insulating coating comprises a plurality of insulating portions which substantially extend between the tip and the end of the electrode, the insulating portions being positioned between the conductive strips to form an alternating pattern, wherein said machining of the groove pattern uses the alternating pattern, and wherein the groove pattern comprises a plurality of alternating grooves and fins, and

[[,]] wherein the conductive strips and the insulating portions are configured so that said machining forms the grooves having dimensions of about 0.01 cm to about 0.06 cm in width and about 0.01 cm to about 0.06 cm in depth and forms the fins having dimensions of about 0.01 cm to about 0.06 cm in width and about 0.01 cm to about 0.06 cm in depth.

19. (Currently amended) ~~The~~ An electrochemical machining method ~~of Claim 17,~~ for rejuvenating at least one cooling passage within an airfoil, said electrochemical machining method comprising:

preparing an inner surface of the cooling passage for electrochemical machining, including removing residue from the inner surface;

positioning an electrode in the cooling passage, the electrode comprising a conductive core and an insulating coating, the insulating coating exposing a plurality of exposed portions of the conductive core; and

machining a groove pattern on the inner surface of the cooling passage using the exposed portions of the conductive core by passing an electric current between the electrode and the airfoil while circulating an electrolyte solution through the cooling passage, said machining producing a rejuvenated cooling passage,

wherein the electrode further comprises a tip and an end, the conductive core extending between the tip and the end, wherein the exposed portions comprise conductive strips of the conductive core extending between the tip and the end of the electrode, wherein the insulating coating comprises a plurality of insulating portions which substantially extend between the tip and the end of the electrode, the insulating portions being positioned between the conductive strips to form an alternating pattern, wherein said machining of the groove pattern uses the alternating pattern, and wherein the groove pattern comprises a plurality of alternating grooves and fins, and

wherein the airfoil comprises a blade airfoil, the cooling passage comprises a radial cooling hole, and the electrode is so dimensioned so as to have a diameter, which is within a range of about 0.008 to about 0.015 cm less that the diameter of the cooling passage.

20. (Currently amended) ~~The electrode of Claim 17,~~ An electrochemical machining method for rejuvenating at least one cooling passage within an airfoil, said electrochemical machining method comprising:

preparing an inner surface of the cooling passage for electrochemical machining, including removing residue from the inner surface;

positioning an electrode in the cooling passage, the electrode comprising a conductive core and an insulating coating, the insulating coating exposing a plurality of exposed portions of the conductive core; and

machining a groove pattern on the inner surface of the cooling passage using the exposed portions of the conductive core by passing an electric current between the electrode and the airfoil while circulating an electrolyte solution through the cooling passage, said machining producing a rejuvenated cooling passage,

wherein the electrode further comprises a tip and an end, the conductive core extending between the tip and the end, wherein the exposed portions comprise conductive strips of the conductive core extending between the tip and the end of the electrode, wherein the insulating coating comprises a plurality of insulating portions which substantially extend between the tip and the end of the electrode, the insulating portions being positioned between the conductive strips to form an alternating pattern, wherein said machining of the groove pattern uses the alternating pattern, and wherein the groove pattern comprises a plurality of alternating grooves and fins, and

wherein the airfoil comprises a vane airfoil having a central passage and a trailing edge, the cooling passage extends between the central passage and the trailing edge, and the electrode is so dimensioned so as to have a diameter, which is within a range of about 0.008 to about 0.015 cm less that the diameter of the cooling passage.

21. (Cancelled)

22. (Currently amended) ~~The~~ An electrochemical machining method ~~of Claim 21,~~ for rejuvenating at least one cooling passage within an airfoil, said electrochemical machining method comprising:

preparing an inner surface of the cooling passage for electrochemical machining, including removing residue from the inner surface;

positioning an electrode in the cooling passage, the electrode comprising a conductive core and an insulating coating, the insulating coating exposing a plurality of exposed portions of the conductive core; and

machining a groove pattern on the inner surface of the cooling passage using the exposed portions of the conductive core by passing an electric current between the electrode and the airfoil while circulating an electrolyte solution through the cooling passage, said machining producing a rejuvenated cooling passage,

wherein the electrode further comprises a tip and an end, the conductive core extending between the tip and the end, wherein the exposed portions comprise conductive strips of the conductive core extending between the tip and the end of the electrode, wherein the insulating coating comprises a plurality of insulating portions which substantially extend between the tip and the end of the electrode, the insulating portions being positioned between the conductive strips to form an alternating pattern, wherein said machining of the groove pattern uses the alternating pattern, and wherein the groove pattern comprises a plurality of alternating grooves and fins,

wherein the insulating coating further exposes a plurality of spacer portions of the conductive core, the spacer portions being longitudinally positioned between the insulating portions, and wherein the groove pattern further includes a plurality of connectors, each connector being longitudinally positioned between two of the fins and connecting two of the grooves,

wherein the conductive strips and the insulating portions are dimensioned so that said machining forms the grooves having dimensions of about 0.01 cm to about 0.06 cm in width and about 0.01 cm to about 0.06 cm in depth and forms the fins having dimensions of about 0.01 cm to about 0.06 cm in width and about 0.01 cm to about 0.06 cm in depth, and wherein the spacer portions are dimensioned so that the fins are spaced by about 0.01 cm to about 0.06 cm along a longitudinal direction.

23-32. (Cancelled)